

AMENDMENTS TO THE SPECIFICATION

On Page 1, after the title of the invention, please insert the following:

RELATED APPLICATION

This application is a divisional of application Serial No. 10/193,625 filed on July 10, 2002.

Please replace the paragraph beginning on Page 1, line 10, with the following new paragraph:

Generally, various copper based alloys are selected for use as a bearing material according to conditions such as oil lubricating conditions, sliding speed and sliding contact surface pressure. For bearing materials used in oil, comparatively soft bronze (e.g., BC3 and BC6), phosphor bronze (e.g., PBC2A), lead bronze (e.g., LBC 2-5) and Kelmet (e.g., KJ 1-4) casting materials are utilized. In conditions a little poor in oil lubricity, Cu-Sn or Cu-Sn-Pb is used as a copper based sintered bearing material and bronzed based [oil-less] oil-less bearings produced by adding graphite (solid lubricant) to Cu-Sn or Cu-Sn-Pb (copper based sintered bearing material) are often used.

Please replace the paragraph beginning on Page 4, line 14, with the following new paragraph:

A prior art bronze based sintered contact material, which has been improved in its characteristics from the above point of view, is disclosed in Japanese Patent Kokai Publication Gazette No. 11-350008 (1999). This publication proposes a double-layered bronze based sintered contact member and its bronze based sintered contact material. In this technique, a powder prepared by blending a bronze powder containing no Pb and 3 to 13 wt% [a] of W powder is dispersed onto a metal backing made of a steel plate; the blended powder and the metal backing undergo sintering and rolling to have high density; and then, sintering is carried out again. According to this technique, since W has good affinity with respect to a bronze matrix and high bonding strength, dropping-off of W due to sliding resistance etc. does not occur. In addition, since W has proper hardness (W: Hv 350 to 500, Mo: Hv 200 to 250), namely, being harder than a bronze matrix and softer than ceramics particles

which are too high in hardness and likely to give damage to their mating material, part of the W particles locally protrudes towards the mating contact member, forming an irregular contact surface. The level difference between the convex and concave portions of the irregular contact surface forms a lubricating oil film. Further, since W has a high melting point (3,410°C), it does not melt unlike Pb. It is considered that, with these features, W keeps good sliding properties free from seizure and non-uniform sliding and does not wear the mating material.

Please replace the paragraph on Page 8, line 3, with the following new paragraph:

In the field of porous bronze based sintered materials which are used as a friction material for brakes and clutches in applications having utterly different purposes from those of contact materials for bearings, there have been developed materials capable to exhibit a high friction coefficient property for stopping a high speed rotor in a dry, semi-dry or boundary lubricating condition. These materials contain, as shown in Tables 1 to 3 (quoted from the report written by Hanazawa in "Journal of the Japan Society for Composite Materials" 3(1), 8, 1977; "Industries and Products" No. 59; and "Ceramics Data Book 76" p.336, 1976), large amounts (5 to 15 wt%) of graphite as a base thereby to ensure porosity and low Young's modulus, and further contain heat-resistant metals (e.g., graphite and Mo) which are solid lubricants having excellent heat resistance to prevent the fusion and seizure of the mating material at the time of braking. Further, they contain 3 to 20 wt% hard particles (non-metallic particles) such as SiO₂ and mullite thereby restricting the plastic flow of the friction material metal base and properly scraping off the surface of the mating material to achieve an improvement in the wear resistance of the friction material and a stable high friction coefficient.

Please replace the paragraph beginning on Page 26, line 22, and continuing on Page 27 with the following new paragraph:

Generally, intermetallic compounds are known to be much harder than metals but have properties (e.g., good thermal shock resistance and plastic deformability) more similar to metals than the aforesaid oxides, carbides, nitrides and carbonitrides.

Tsukamoto, Takahashi, Komai, Hayama et. al. investigated cases where large amounts of various intermetallic compounds were added, with a view to attaining high friction coefficients and an improvement in the wear resistance of friction materials and reported in "Powder and Powder Metallurgy" 31, p_290 (1984) that intermetallic compounds suited for friction materials had a hardness of Hv 350 or more and a softening temperature of 400°C or more. However, as obvious from the cases of ZrB_2 and Al_2O_3 described above, the sliding properties cannot be simply improved by optimizing the hardness of the intermetallic compounds.